Product Safety Information

2,5-Dimethylhexadiene-2,4

This Product Safety Information Sheet is principally directed to managerial, safety, hygiene and medical personnel. The description of physical, chemical and toxicological properties and handling advice is based on experimental results and past experience. It is intended as a starting point for the development of health and safety procedures.

This Product Safety Information Sheet meets the material safety data sheet (MSDS) requirements of the federal OSHA Hazard Communication standard (29 CFR 1910.1200).

SYNONYM: Diisocrotyl

CAS REGISTRY NUMBER: 764-13-6

CAS INDEX NAME: 2,4-Hexadiene,2,5-dimethyl-(8CI9CI)

I. PHYSICAL AND CHEMICAL PROPERTIES

FORMULA: C_8H_{14}

MOLECULAR WEIGHT: 110.2

PHYSICAL STATE/DESCRIPTION: Clear, colorless to pale yellow liquid

AUTOIGNITION TEMPERATURE 560°F (293°C)

BOILING POINT: 273°F (134°C)

DENSITY: 6.4 lb/gal at 77°F (25°C) approximate

FLASH POINT: 74°F (23.3°C) Closed Cup

MELTING POINT: 58.1°F (14.5°C)

ODOR: Pleasant hydrocarbon

PERCENT VOLATILE BY VOLUME: 100

IN CASE OF SUSPECTED POISONING, REFER TO THE INFORMATION IN SECTION VII: HUMAN HEALTH AND THE PROCEDURE AND EMERGENCY CONTACTS IN SECTION VIII: FIRST AID.

IN CASE OF SPILLAGE, REFER TO THE PROCEDURE AND EMERGENCY CONTACTS IN SECTION X: SPILL HANDLING OR CALL CHEMTREC (800) 424-9300.

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Stauffer CHEMICALS

STAUFFER CHEMICAL COMPANY
INTERMEDIATES DIVISION
Westport, Connecticut 06881

I. PHYSICAL AND CHEMICAL PROPERTIES-CONTINUED

SOLUBILITY: Practically insoluble in water. Soluble in hydrocarbons, ketones, alcohols and esters.

SPECIFIC GRAVITY (Water=1): 0.764-0.772 at 77°F/77°F (25°C/25°C)

VAPOR DENSITY (Air=1) 3.8

VAPOR PRESSURE: 100 mm Hg at 168.8°F (76°C)

II. CHEMICAL REACTIVITY

Very reactive. Readily undergoes halogen, hydrohalogen and other addition reactions. May react vigorously on contact with oxidizing agents.

III. STABILITY

Forms explosive peroxides in the presence of oxygen at elevated temperatures. Stable under an inert atmosphere at ambient temperatures.

IV. FIRE HAZARD

Defined as flammable and a fire hazard. Supports combustion and decomposes under fire conditions to give off toxic materials. Do not use welding or cutting torch on or near any container of this material, even empty, because an explosion could occur. Do not use, pour, spill or store near heat or open flame.

Vapors are heavier than air and may travel considerable distance to source of ignition and flashback. Due to relatively high electrical resistivity, material may accumulate a static charge.

V. FIREFIGHTING TECHNIQUE

Products of combustion are irritating to the respiratory tract and may cause breathing difficulty and pulmonary edema. Symptoms may be delayed several hours or longer depending upon the extent of exposure.

As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate nonessential personnel from the fire area. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing.

If not leaking, keep fire-exposed containers cool with a water spray to prevent rupture due to excessive heat. High pressure water hose may spread product from broken containers increasing contamination or fire hazard.

Use water with caution. Because the material is lighter than water and insoluble in water, the fire could easily be spread by the use of water in an area where water could not be contained. Water may be ineffective for fire fighting. Therefore, use water spray, dry chemical, carbon dioxide or chemical foam.

VI. TOXICOLOGY

INGESTION

The acute oral LD50 is greater than 5000 mg/kg in male and female rats. A single oral dose of 5000 mg/kg produced a mild to moderate decrease in physical activity, ruffled and wet fur, alopecia and 20 percent mortality in male rats. A single oral dose of 5000 mg/kg produced mild to moderate decrease in physical activity, severe prostration with weakness in hind legs and 30 percent mortality in female rats.

SKIN CONTACT

The acute dermal LD50 is greater than 2000 mg/kg in rabbits. A single dermal application of 2000 mg/kg did not produce signs of toxicity in rabbits. Local effects were mild edema and mild to moderate erythema.

Nonirritant to rabbit skin following a 4-hour exposure.

EYE CONTACT

Mild irritant to rabbit eyes. Mild discharge and mild redness were reversible by seven days.

INHALATION

The acute inhalation LC50 is greater than 3.0 mg/l in both male and female rats. A single 1-hour inhalation exposure of 3.0 mg/l as vapor did not produce signs of toxicity in male and female rats.

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VII. HUMAN HEALTH

The principal routes of exposure are skin contact and inhalation. Contact with eyes may cause irritation. There are no data available which address medical conditions that are generally recognized as being aggravated by exposure to this product. (Reader should consult SECTION VI: TOXICOLOGY for effects observed in experimental animals under controlled laboratory conditions using this product.)

VIII. FIRST AID

If a known exposure occurs or is suspected, immediately start the recommended procedures below. If further treatment is required, contact a Poison Center, a physician or the nearest hospital. Inform the person contacted of the type and extent of exposure, describe the victim's symptoms, and follow the advice given.

FOR ADDITIONAL MEDICAL OR TOXICOLOGICAL INFORMATION,
CALL COLLECT, DAY OR NIGHT,
STAUFFER CHEMICAL COMPANY (203) 226-6602
OR CHEMTREC (800) 424-9300

INGESTION

If swallowed, immediately give several glasses of water but do not induce vomiting. If vomiting does occur, give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Do not give anything by mouth to an unconscious or convulsing person.

SKIN CONTACT

Flush all affected areas with plenty of water for several minutes. Seek medical attention if skin irritation occurs.

EYE CONTACT

Flush the eyes with plenty of running water for at least 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Seek medical attention if eye irritation occurs.

INHALATION

If inhaled, remove to fresh air. Seek medical attention if respiratory irritation occurs or if breathing becomes difficult.

IX. INDUSTRIAL HYGIENE

The recommendations described in this section are provided as general guidance for minimizing exposure when handling this product. Because use conditions will vary depending upon customer applications, specific safe handling procedures should be developed by a person knowledgeable of the intended use conditions and equipment. During the development of safe handling procedures, consideration should be given to the need for cleaning of equipment and piping systems to render them non-hazardous before maintenance and repair activities are performed.

ENGINEERING CONTROLS

In those cases where engineering controls are indicated by the use conditions, the following traditional exposure control techniques may be used to effectively minimize employee exposure: local exhaust ventilation, enclosed system design or process isolation and remote control in combination with appropriate use of personal protective equipment.

INGESTION

All food should be kept in a separate area away from the storage/use location. Eating, drinking and smoking should be prohibited in areas where there is a potential for significant exposure to this material Before eating, hands and face should be thoroughly washed.

SKIN CONTACT

Skin contact with liquid or its aerosol should be minimized through the use of gloves and suitable long-sleeved clothing selected with regard for use condition exposure potential.

EYE CONTACT

Eye contact with liquid or its aerosol should be avoided through the use of chemical safety glasses, goggles or a face shield selected with regard for use condition exposure potential.

INHALATION

If use conditions generate airborne vapor or aerosol, the material should be handled in an open (e.g., outdoor) or well ventilated area. Where adequate ventilation is not available, use NIOSH-approved organic vapor respirators to reduce exposure. Where exposure potential under the use conditions necessitates a higher level of protection, use a positive-pressure, air-supplied respirator.

EXPOSURE LIMITS

No exposure limits have been established for this material.

X. SPILL HANDLING

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices (refer to SECTION IX: INDUSTRIAL HYGIENE).

Any person entering either a significant spill area or an unknown concentration of a vapor or aerosol should use a positive-pressure self-contained breathing apparatus or a positive-pressure supplied-air respirator with escape pack.

Small spills can be handled routinely. Use adequate ventilation and/or wear a NIOSH-approved organic vapor respirator to prevent inhalation exposure. Wear protective clothing to prevent skin and eye contact Use the following procedures:

Soak up pooled liquid with a suitable absorbent such as clay, sawdust or kitty litter. Sweep up absorbed material and place in a chemical waste container for disposal (refer to SECTION XIII: DISPOSAL OF MATERIAL). Generously cover contaminated area with a slurry of common household powdered laundry detergent and water. Using a stiff brush, work the slurry into cracks and crevices. Allow to stand for 2-3 minutes then flush with water. Repeat if necessary.

Large spills should be diked and pumped to salvage according to a predetermined plan. For assistance in developing a plan, contact the Intermediates Division, Stauffer Chemical Company, Westport, CT 06881.

IN CASE OF SPILL EMERGENCY, DAY OR NIGHT, CALL
(800) 424-9300 CHEMTREC

XI. CORROSIVITY TO MATERIALS OF CONSTRUCTION

Noncorrosive to materials commonly used in the construction of process equipment, storage and shipping containers.

XII. STORAGE REQUIREMENTS

Containers should be stored in a cool, dry, well ventilated area away from flammable materials and sources of heat or flame. Store away from foodstuffs or animal feed. Exercise due caution to prevent damage to or leakage from the container. Do not store at temperataures above 85°F (30°C).

XIII. DISPOSAL OF MATERIAL

Material that cannot be used or chemically reprocessed should be disposed of at an approved facility in accordance with any applicable regulations under the Resource Conservation and Recovery Act. NOTE: State and local regulations may be more stringent than federal.

XIV. DISPOSAL OF CONTAINER

Dispose of empty containers according to any applicable regulations under the Resource Conservation and Recovery Act. NOTE: State and local regulations may be more stringent than federal

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FOR NONEMERGENCY HANDLING INFORMATION,
CONTACT THE INTERMEDIATES DIVISION
STAUFFER CHEMICAL COMPANY, WESTPORT,
CT 06881 OR PHONE (203) 222-3000.

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